

SECTION 275.00 – ITD QUALITY ASSURANCE STANDARD PROCEDURES

QA Standard Procedure No. 1 - ITD Standard Density Procedure & ITD Procedure for Determining
Moisture Correction for AASHTO T310

QA Standard Procedure No. 2 - AASHTO T176 Sand Equivalent

QA Standard Procedure No. 3 - AASHTO T308 Asphalt Binder Content by Ignition Oven Modifications

QA Standard Procedure No. 1

ITD STANDARD DENSITY PROCEDURE

SOILS AND AGGREGATES: Test method [AASHTO T310](#) is used to determine the in-place density. The results are expressed as a percentage of the maximum dry density from the applicable density method selected per the [Supplemental Specification 205.03 Table](#).

- For [AASHTO T99](#) or [AASHTO T180](#), a one-point determination per [AASHTO T272](#) is performed for every compaction test to select the proper moisture-density curve, including correction for coarse aggregate ([AASHTO T224](#)) when necessary.

When a family of curves ([AASHTO T272](#)) has not been developed for material, the use of a single curve can apply. One-point data can be used to extend the relationship from a single curve, provided the following two criteria are met. Otherwise, an additional maximum density curve must be developed.

1. The one-point data must match the single curve within 32 kg/m^3 (± 2 pounds/cubic foot).
2. The moisture content of the one-point data must be between 80-100% of optimum moisture of the single curve.

- For Idaho T74 curve, the standard density is the maximum dry density corresponding to the percent passing the 4.75 mm (No. 4) sieve.

A field gradation test is not required for each density location if the gauge has been calibrated for moisture correction **and** the density gauge reading is above 95% (94.6 rounded) at the peak point of the Idaho T74 curve.

- For materials identified as too granular to test (per definitions in [Standard Specification Subsection 205.03, Part D](#)), materials are compacted according to the method specification. Documentation is required of the compaction equipment and compaction effort. A gradation is performed and recorded on the [ITD-850](#) at the same frequency as a density test for verification of the too granular to test.

CEMENT RECYCLED ASPHALT BASE STABILIZATION (CRABS): Test method [WAQTC TM8](#) backscatter mode is used to determine in-place density with the following modification:

- A roller pattern curve is established with single shot (no rotation required) one-minute counts with the uncorrected nuclear densometer.

PLANTMIX PAVEMENT: Test method [WAQTC TM8](#) backscatter mode is used to determine in-place density.

- For plantmix pavement when no acceptance test strip is required, density is determined from a minimum of five (5) random cores.

QA Standard Procedure No. 1 (Continued)
ITD PROCEDURE FOR DETERMINING
MOISTURE CORRECTION FOR [AASHTO T310](#)

For each soil or material type, the average moisture content of at least seven (7) consecutive tests is calculated to indicate the density gauge is reading the moisture content within a tolerance of 1% moisture content of the actual [AASHTO T255/265](#) test results. If the average moisture content exceeds the 1% tolerance, a moisture correction is applied. If less than seven density tests are required for a specific material type, then the percent moisture is determined by performing [AASHTO T255/265](#).

QA Standard Procedure No. 2
AASHTO T176 (SAND EQUIVALENT)

TECHNICIAN QUALIFICATION PER [AASHTO T176](#), SECTION 8 OPERATOR QUALIFICATIONS

Technician qualification for sand equivalent testing using the mechanical shaker method is covered by the WAQTC Aggregate module, however, the manual and hand methods are not. Therefore, an individual qualification is required per [AASHTO T176](#), Section 8 Operator Qualifications when equipment necessitates sand equivalent testing using either the manual method or hand method.

When the manual or hand method is to be used, the District Independent Assurance inspector will evaluate and qualify the ITD testing technicians performing the testing per [AASHTO T176](#), Section 8 Operator Qualification. The testing technician is responsible for making arrangements for the evaluation prior to the start of such testing.

Contractors are responsible for qualification of their testing technicians, per [AASHTO T176](#), Section 8 Operator Qualification, when performing sand equivalent acceptance testing using either the manual method or hand method. The Contractor is responsible for the documentation of the evaluation and qualification of the testing technician by a WAQTC-qualified tester.

Attached is a Certificate of Qualification to be used for documenting individual qualification of testers for the manual method or hand method. The individual qualification will be valid for a period of three years.

LABELING OF SE SOLUTION

SE solution containers will be labeled with the date the working solution was mixed. In accordance with AASHTO T176-02, Section 2.8, working solutions older than 30 days will be discarded.

Idaho Transportation Department

Technician Qualification for AASHTO T176 (Manual or Hand Method)

Technician Name & Sampler Tester Number (WAQTC)

Has met the qualification requirements to perform AASHTO T176 Plastic Fines in Graded Aggregates and Soils by the use of the Sand Equivalent Test per section 8 (operator qualifications). Both Manual and or Hand shaking results were compared with the Mechanical shaker method and met the required standards. This qualification is valid for a period of three years beginning with the date the tests were performed.

Date

Manual Method Results

Hand Method Results

Mechanical Method Results

Sample #1:

Sample #2:

Sample#3:

Ave. \pm 4:

Tests Observed by:

Printed Name & WAQTC No.

Signature

Date

District Materials Engineer:

Signature

Date

QA Standard Procedure No. 3
AASHTO T308 ASPHALT BINDER CONTENT BY IGNITION OVEN
MODIFICATIONS

The following procedure is applicable to the 2001 edition of AASHTO T308. These revisions, additions, deletions or clarifications to the test method shall be in effect on all ITD Projects until further notice. Reevaluation will be necessary for future editions of the test method.

ADD TO SECTION 6.6: (6.11)

ADD THE FOLLOWING:

6.11 Aggregate Correction Factors

6.11.1 Certain aggregate types may result in unusually high amounts of P200 material due to aggregate breakdown caused by the burning. The procedure for determining the 75 um (No. 200) sieve aggregate correction factor will be as follows in Section 6.11.2. The procedure for determining the plus 75 um (No. 200) sieve aggregate correction factors will be as follows in Section 6.11.3.

6.11.2 For the 75 um (No. 200) sieve, perform the gradation analysis on the residual aggregate as indicated in Section 6.6. Subtract the actual percent passing the 75 um (No. 200) sieve for each sample from the measured percent passing the 75 um (No. 200) sieve of the “blank” sample (as determined in Section 6.3). Determine the average of the two values. If the resultant average value is greater than 0.5%, as indicated in the table below, a correction factor (equal to the resultant average value) for the passing 75 um (No. 200) sieve shall be applied to the 75 um (No. 200) sieve.

6.11.3 For the plus 75 um (No. 200) sieve aggregate, perform the gradation analysis on the aggregate as indicated in Section 6.6. Subtract the actual percent passing each sieve for each sample from the measured percent passing each sieve of the “blank” sample (as determined in Section 6.3). Determine the average of the two values. If the difference for any single sieve exceeds the allowable difference for that sieve as established in the following table, then the gradation correction factors for all sieves shall be applied to all test results.

Sieve	Allowable Difference
Sizes 2.36 mm (#8) and larger	+/- 5.0%
Sizes larger than 75 um (No. 200) sieve and smaller than 2.36 mm (#8)	+/- 3.0%
Size 75 um (No. 200) sieve and smaller	+/- 0.5%

ADD THE FOLLOWING:

8.12 Weigh and record the total mass of the sample, basket(s), catch pan, and basket guards. Calculate and record the final mass W_A of the sample (total mass minus the mass of the specimen basket assembly) after ignition to the nearest 0.1 g.

QA Standard Procedure No. 3 (Continued)

- 8.13 Calculate the asphalt content of the sample as per Section 10.16 to verify the corrected asphalt binder content from the printed ticket.

If the calculated asphalt binder content is within 0.15% use the corrected asphalt binder content (percent) from the printed ticket. If the difference is greater than 0.15% use the calculated asphalt binder content (percent) and determine and correct the source of the variation prior to reliance on the printed ticket.